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Combat Crew

strategic air command

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AUGUST 1977

Combat Crew

Magazine of the Strategic Air Command - 28th Year of Publication

GEN. RICHARD H. ELLIS
COMMANDER IN CHIEF, SAC

MAJ. GEN. EARL G. PECK
Deputy Chief of Staff, Operations

COL. JESSE S. HOCKER
Director of Safety

STAFF

LT. COL. RICHARD W. BLATTER
Editor

G. FRANCIS FARRELL
Associate Editor

SrA GERALD F. MORIARTY
Art Editor

MARY JANE ABBOUD
Editorial Assistant

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ON OUR COVER

SAC's hard-working, efficient KC-135s are in the process of receiving a new lease on life through a modification program called ECP-405. For more on this story, see page 4.

SACRP 127-1 **VOL. XXVII. NO. 8** **AUGUST 1977**

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General Richard H. Ellis assumed command of Strategic Air Command on 1 August. Prior to his assignment at Hq SAC he was Commander, Allied Air Forces Central Europe (AAFCE), and Commander in Chief, United States Air Forces in Europe (USAFE), with headquarters at Ramstein Air Base, Germany.

The general was born in Laurel, Del., on July 19, 1919, and completed elementary and high school in Laurel. He received his bachelor of arts degree in history from Dickinson College, Carlisle, Pa., in 1941, and juris doctor degree from Dickinson Law School in 1949. He was awarded an honorary doctor of science degree from Dickinson College in 1961 and honorary doctor of laws from Dickinson Law School in 1974.

General Ellis entered active military duty in September 1941 and went to Maxwell Field, Ala., as an aviation cadet. He received his commission and pilot wings at Turner Field, Ga., in April 1942.

During World War II, he served with the 3d Bombardment Group in Australia, New Guinea and the Philippines, and flew over 200 combat missions in the Western Pacific area. He served as a pilot, squadron commander, group operations officer, and in September 1944 became the group commander. In April 1945 General Ellis was assigned as Deputy Chief of Staff, Far East Air Forces, in the

NEW COMMANDER FOR SAC . . .

General Richard H. Ellis

Philippine Islands and Japan.

He requested release from active duty, became a member of the Air Force Reserve, and entered Dickinson School of Law in 1946. He graduated in 1949, and after admission to the Delaware Bar practiced law in Wilmington, Del. Recalled to active duty in October 1950, he was assigned first to Headquarters Tactical Air Command, Langley Air Force Base, Va.; then as Deputy for Operations, 49th Air Division, Sculthorpe, England; and later as Chief, Air Plans and Operations Section, at Supreme Headquarters Allied Powers Europe (SHAPE).

From January 1956 to May 1958, General Ellis was the Deputy Chief of Staff, Operations, Headquarters Nineteenth Air Force, Foster Air Force Base, Tex. He was then assigned to the Directorate of Plans, Headquarters U.S. Air Force, Washington, D.C., first as Chief, Weapons Plans Branch; then as Assistant Director of Plans for War Plans; and later as Assistant Director of Plans, Joint Matters.

In July 1961, General Ellis became Executive to the Chief of Staff of the U.S. Air Force. Two years later he assumed command of the 315th Air Division, Tachikawa Air Base, Japan. He returned to Washington, D.C., in June 1965, and served as Deputy Director, J-5 (Plans and Policy) with the Joint Staff. In August 1967 he returned to the Air Staff, this time as Director of Plans. He assumed command of the Ninth Air Force, with headquarters at Shaw Air Force Base, S.C., in September 1969.

He was appointed Vice Commander in Chief of United States Air Forces in Europe in September 1970. General Ellis was assigned as Commander, Sixth Allied Tactical Air Force, with headquarters at Izmir, Turkey, in April 1971; as Commander of Allied Air Forces, Southern Europe, with headquarters at Naples, Italy, in June 1972; and assumed additional duty as Commander, Sixteenth Air Force, Spain, in May 1973.

General Ellis served as Vice Chief of Staff, U.S. Air Force, from November 1973 to September 1975. On Aug. 29, 1975, he was appointed Commander, Allied Air Forces Central Europe, and on Aug. 30, 1975, he assumed command of United States Air Forces in Europe.

General Ellis is a command pilot. He has been awarded the Distinguished Service Cross, Distinguished Service Medal with two oak leaf clusters, Silver Star, Legion of Merit with two oak leaf clusters, Distinguished Flying Cross, Air Medal with four oak leaf clusters, and Purple Heart. He was also awarded the State of Delaware Distinguished Service Medal by Governor Bacon in 1946.★★★★

A NEW LEASE ON LIFE

Lt Col Richard W. Blatter
Editor

In June 1957, SAC accepted delivery of the first KC-135 which was assigned to the 93d AREFS at Castle. Later that same year, a KC-135 with General Curtis E. LeMay at the controls established an official world distance record on a nonstop, nonrefueled flight from Westover AFB, Massachusetts, to Buenos Aires, Argentina: 6,322.85 miles. On the return trip, the KC-135, again with General LeMay at the controls, established a world course speed record from Buenos Aires to Washington, D.C.: 471.45 mph average for 11 hours, 3 minutes and 57 seconds. That was a big year for SAC and the KC-135. Since that time, the 135 has continued to make an indelible mark on the history of airpower.

SAC eventually accepted delivery of 732 tankers and an additional fleet of reconnaissance and command control aircraft for a total of 820 135s. These aircraft, along with the crews who flew them, have set several world records for speed, distance and weight lifting performance. Along with many years of alert duty in support of the U.S. deterrent posture, SAC crews have also performed several heroic acts with the 135 such as the routine refueling mission in 1967 that ended with saving six Navy aircraft over the Gulf of Tonkin. The crew of that KC-135 was awarded the MacKay Trophy for their superb feat of airmanship.

The 135's contribution to our effort in Southeast Asia is certainly significant, especially when we remember the huge effort involved in operations such as YOUNG TIGER and LINEBACKER. The 135's proud record was started a long time ago and it is certain the record breaking performance will continue for many years to come.

With approximately 20 years of operation behind them, some of our 135s began approaching the outer limit of the original wing design life. In order to increase the useful life of the airplane, a need existed to extend the wing design life. As a result, Air Force and SAC have established a requirement for a structural modification of the 135 wing lower surface. The modification, which is called ECP 405, is designed to extend the wing lower surface service life an additional 27,000 flying hours.

After hearing a lot of talk about ECP 405 and the benefits to the tanker fleet, Combat Crew made a quick trip to Boeing Wichita to find out more about it and to get a close look at the modification being performed. When we arrived at Wichita we had the opportunity of spending a full day with Mr. Harry

WING SKIN REPLACEMENT - ECP 405

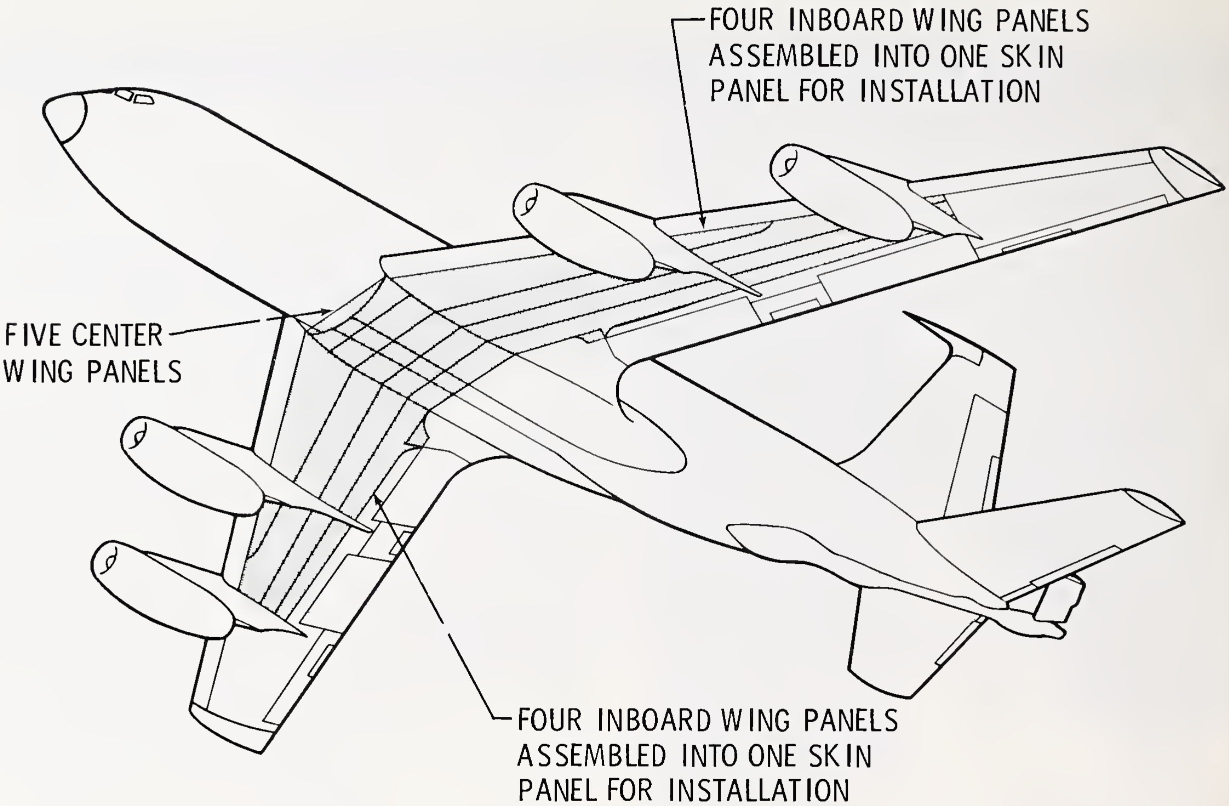
FOUR INBOARD WING PANELS ASSEMBLED INTO ONE SKIN PANEL FOR INSTALLATION
FIVE CENTER WING PANELS
FOUR INBOARD WING PANELS ASSEMBLED INTO ONE SKIN PANEL FOR INSTALLATION

Figure 1

Mankins, the Boeing ECP 405 program manager. During our discussion and tour through the plant, we covered just about every aspect of the modification that would be of interest to the crewmember. We talked about the safety benefits that the program offers and also the benefits in terms of long range economic utilization of the SAC tanker fleet.

Three interesting facets of the modification design are that it offers an additional 493 pounds of usable fuel, a leak-free wing and, like the existing 135 wing, a fail-safe design.

The modification consists of two major operations. The first is the fabrication of the components of the new wing lower skin. This process involves milling skin spars, rib chords, stiffeners and all other wing structural components that make up the new skin. These component parts are subassembled to form wing panels. They are then placed together in a final assembly jig which is used in completing the two large skin panels. The final product is called a modification kit. To allow for model differences the C/KC-135 fleet, eight different modification kits are required.

The second major operation in the modification is the installation of the kit on the wing lower surface.

Mankins explained that the ECP 405 structural modification replaces the 135 wing lower surface primary structure. The structural replacement (Fig. 1) starts from outboard of the number one engine strut through the center wing section and to a position outboard of number four engine strut. The replacement structure includes the center wing section and extends approximately 130 feet across the lower wing surface. In addition, new wing panel stiffeners, lower spar chords, lower rib chords, fuel dam-shear ties, engine strut attachments, center wing to inboard wing rib chord and splice plates are installed (Fig 2).

In order to gain the additional 27,000 flying hours of wing service life, engineers designed the new structure to be much more durable and damage tolerant than the old underwing surface. The modification replaces the present 22 wing skin panels made of 7178 aluminum alloy with 13 wing skin panels of more crack resistant 2024 aluminum alloy.

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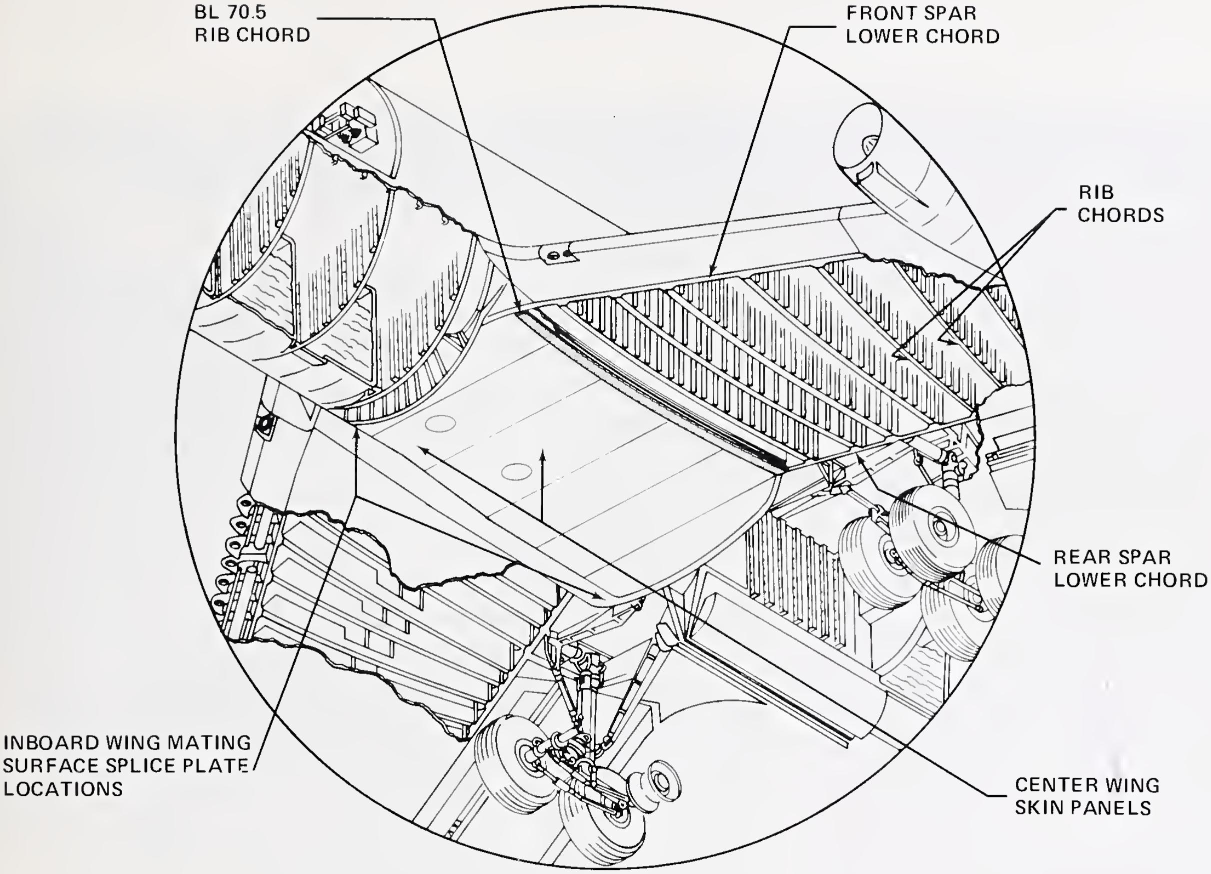
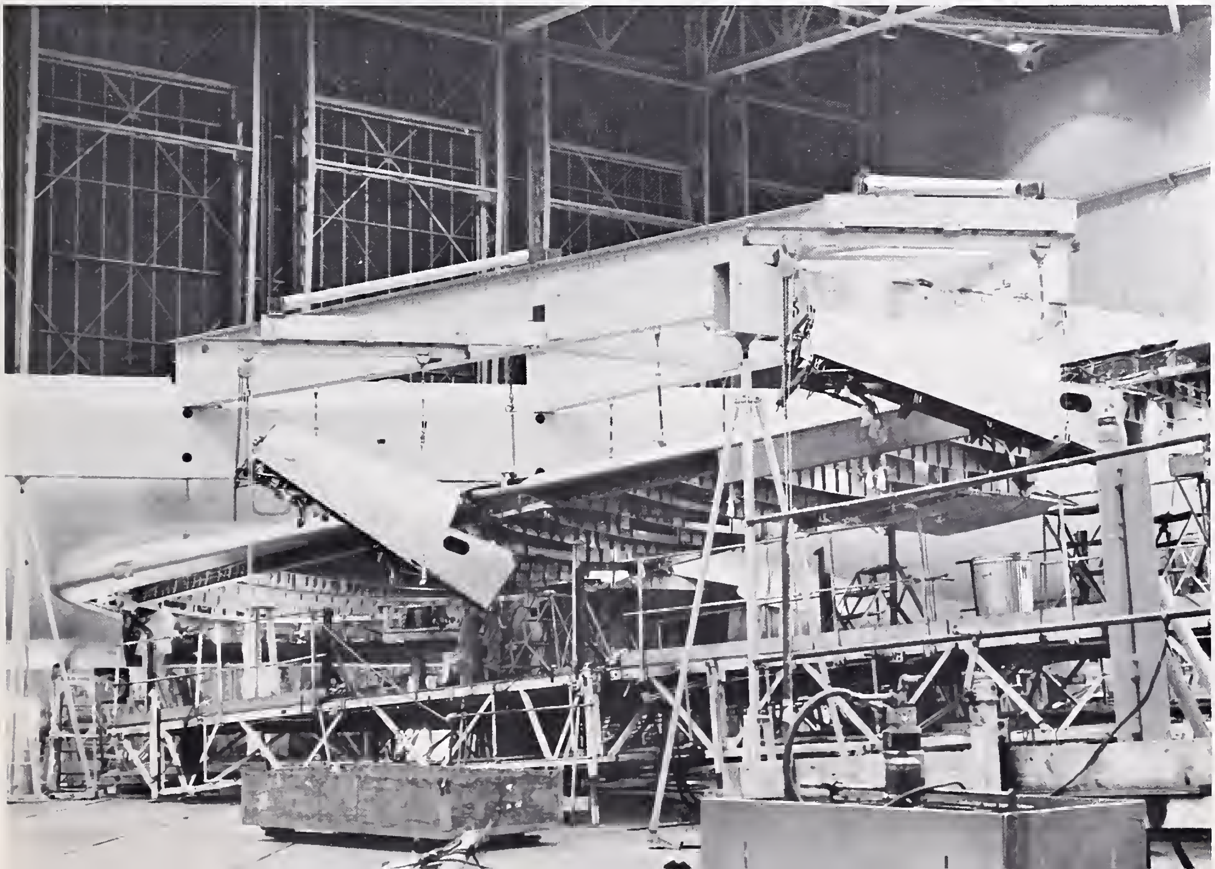


Figure 2

During preinstallation preparation the aircraft is jacked into position. Strongbacks are in place to maintain wing alignment.



RIVET SAVE A REALITY

MAJOR Richard M. Johnson
90th SMW F. E. Warren AFB

Capt David E. Evans
Hq SAC/XPQD
Offutt AFB

July 1, 1977 was of major significance to the SAC Minuteman crew force. On that date, project RIVET SAVE was implemented at the six Minuteman missile wings. This project will culminate in a significant reduction in the size of the Minuteman crew force by 1978. This fact alone makes RIVET SAVE an important project, yet its impact goes far beyond a manpower reduction.

The genesis of RIVET SAVE is found within a study of how cost reduction objectives could be applied to Minuteman crew manning while still maintaining high standards of weapon system integrity. Manpower planners quickly recognized that the crew force could be reduced by returning to the Minuteman I duty schedule of 24 hour alerts. This schedule was predicated on allowing

one crewmember to sleep during part of his alert in the LCC. Changes in the weapon system had occurred, however, and the Minuteman is now far more complex and each LCC has vastly increased capabilities. Before the 24-hour alert concept would be acceptable, changes in hardware and crew procedures would be necessary. These changes comprise project RIVET SAVE.

The hardware modification involves logic circuitry and thumbwheel switch changes to the launch enable control group signal panel (LECGSP). The modification allows removal of a part of the launch enable code from the LCC. The enable code is a prerequisite to the launch command being accepted by any missile. Without the enable code, the missile cannot launch. Prior to RIVET SAVE each LCC had the entire enable code for its squadron stored in a mechanical code unit (MCU) located within the LECGSP. Removal of the code aligns the Minuteman system with other SAC nuclear weapon systems. That is, the enable code is withheld until the nuclear weapon is released by national command authority.

Most of the changes in crew procedures involve missile enabling — now called positive enabling. Crews will be able to take launch actions only after receipt of a launch directive containing a special code which will provide a portion of the enable code. The crews will then enter the special code on the modified thumbwheel switches of the LECGSP and activate the enable switch. Activation of the enable switch will release a pre-stored code from the MCU and combine it with the special code received in the launch directive. This combination forms the launch enable code which, when received by the missile, prepares it for launch. Beyond this point crew launch procedures remain the same.

SAC participated in a combined development test and evaluation and qualification operational test and evaluation program that started in November 1976. The purpose of this program was to insure complete confidence in the new hardware, new technical data, and new crew operations procedures. All aspects impacted by the RIVET SAVE modification were carefully evaluated by personnel from 1 Strategic Aerospace Division, 3901 Strategic Missile Evaluation Squadron, 4315 Combat Crew Training Squadron, Ogden Air Logistics Center, Air Force Systems Command, and involved contractors. This comprehensive test program was conducted at Vandenberg AFB and Ogden ALC (Hill AFB) test facilities and was successfully completed in January 1977.

Additional testing of RIVET SAVE and associated procedures began in May with the follow-on test and evaluation (FOT&E) program. Operational personnel from Grand Forks, F. E. Warren, and Whiteman AFB participated in this extensive test program to verify the new hardware procedures. The testing, in conjunction with operational test launches at Vandenberg, concentrated on all Minuteman weapon systems, i.e., WS-133B (CDB), WS-133A-M(CDB), WS-133A-M(SSAS). FOT&E allows HQ SAC to ascertain the overall effectiveness and suitability of RIVET SAVE within the scope of missile operations.

But is the modification safe? The Nuclear Weapon System Safety Group, the Air Staff, the Energy Research and Development Administration and the Defense Nuclear Agency concluded that the RIVET SAVE modification will allow a reduction in the size of the crew force while actually increasing already stringent nuclear safeguards. The Secretary of Defense concurred with the conclusion and in May approved the safety rules for implementing RIVET SAVE on 1 July. With the advent of RIVET SAVE, Minuteman crew force reductions associated with the project have begun. The Military Personnel Center (MPC) at Randolph AFB and HQ SAC Personnel have established the procedures to systematically draw down the Minuteman crew force from 900 authorized crews to the projected new total of 600. April 1978 has been set as the target date to reach this new figure. The reduction will come in three increments. The first increment began 1 July and will end 30 September 1977. The second period is 1 October through 31 December 1977 and the final period is 1 January to 1 April 1978. MPC has developed guidelines for total numbers and experience levels included in each increment. These guidelines have been sent to Minuteman units to provide crewmembers with planning information for future career/personnel actions.

The AF Form 90 is the vehicle to be used by personnel planners to identify individuals for reassignment. Each CBPO at the six Minuteman units has the necessary information for completing this form. It is marked RIVET SAVE and receives special attention through personnel channels.

Is RIVET SAVE worth the resources expended? The modification program costs approximately $7 million. Projected annual cost savings of $14 million certainly justify the modification. Training costs will be significantly reduced. Additional savings will accrue in salaries and related personnel costs attributed to 600 officers leaving the six Minuteman units. Reductions in staff and command functions are also being studied for possible dollar savings.

To SAC Headquarters, the RIVET SAVE program allows cost savings without imposing hardship on the crew force and without any risks to operations, safety, and security. To many crewmembers, it seemed a long time coming. After countless 36 or 40 hour alerts, the 24 hour alert was a goal that never seemed attainable. RIVET SAVE is now a reality.

A Naval aviator talks about Air Force operations

Editor's note: This is the first part of a two-part interview that will feature a Navy and an Air Force pilot who have served tours under the Interservice Officer Exchange Program.

Lt Commander Andy Sewall is a Fleet-experienced A-7E pilot currently attached to VA-66. He served his exchange tour with the 76th Tactical Fighter Squadron at England AFB, LA, flying the A-7D. During this 2-year tour, LCDR Sewall participated in deployments to the Panama Canal Zone and Barbers Point, HI. He was selected as the TAC "Aircrew of Distinction" in March 1975 for his handling of a dual hydraulic failure involving structural failure of the port aileron. Previous Navy assignments invlude VT-7 (SERGRAD), VA-81, and Naval War College, Newport, RI. He has flown all operational models of the A-7 and has in excess of 1500 hours in the aircraft.

Cdr Sewall's perceptions and evaluation of the safety systems under discussion are based on a 2-year stateside TAC exchange tour.

Q. What would you say is the major philosophical difference between the operating and safety procedures of the Air Force?

A. That is a *big* question! The first difference has to be in how we perceive operational readiness at the local level. Readiness is composed of hardware and personnel maintained at a certain level of proficiency. But the emphasis in each community is different. In the Air Force, the emphasis is on hardware and the conservation of physical assets at the expense of maximum exposure to potentially hazardous situations. This asset conservation is achieved through a vigorous safety system consisting of operational restrictions and regulations designed to limit pilot exposure to more demanding situations until more aeronautical experience is obtained. In the Navy, the complex nature of shipboard operations requires a great deal of aeronautical maturity very early in a pilot's career. We cannot depend on extensive restrictive regulation for protection. We must be exposed to and develop the ability to handle rapidly changing situations early in our training. Both philosophies have their trade-offs.

Q. The Navy goes pretty much by the words "Safety is paramount." Do you feel this is really just lip service?

A. If safety were paramount, we'd lock all the aircraft on the hangar deck and look at them a lot. The ability to fly and fight is paramount. Safety during routine peacetime operations is only a means of ensuring that we have the assets and personnel required when the need arises.

Because the services do have a different emphasis, as previously indicated, a simple comparison might serve to illustrate the point of our "lip service to safety." If a situation arose where an aircraft had a discrepancy in the "gray area," the Air Force pilot would usually sway toward the safe decision and use a spare or cancel the hop. On the other hand, a Navy pilot would lean more toward completing the mission, even if a spare were not available. In this instance, the desire to complete a peacetime mission overrides the considerations of safety. In that respect, we have "lip service."

Q. Why do you think the two services approach this matter differently?

A. The divergent philosophies mentioned earlier are reinforced by a system of organizational rewards. In the Navy, while the safety record is supposedly important, the promotion and major recognition goes to the commander whose unit flies the most hours, drops the most bombs accurately, or has the most arrested landings. We quantify performance and readiness with these values. In the Air Force, I feel the promotions go to the commander who performs, but performance is measured in terms of the greatest production with the fewest deviations from established regulations. The regulations, when followed, are designed to ensure the safe completion of the mission.

Q. How do Air Force flight operations reflect the different philosophies they have?

A. The Air Force has a system of directives which is fairly restrictive in nature (compared to Navy counterparts) and an all-pervading system of standardization that ensures that all squadrons will function identically. Regulations and standardization are monitored by an agency external to the squadron command to ensure compliance.

For instance, they have specific weather minimums for entering a target range. They have different launch/recovery minimums for pilots with different experience levels. They do not allow touch-and-go landings in single-seat aircraft. They are not permitted to fly overhead, 360 approaches at night. These restrictions are established by the major command and are strictly enforced. They have "boldface" emergency procedures which each pilot must successfully test on each week. It's a routine test, but mistakes are not permitted. In the event of an error, pilots are required to successfully retake the test prior to their next flight. These are just a few examples.

On the other hand, the Navy has OPNAVINST 3710, NATOPS, and squadron SOPs, which vary from command to command. Our standardization and restirctive regulations are minimal, thereby providing maximum opportunity to exercise "pilot prerogatives" and individual command preferences in our daily operations.

Q. What effect does this have on the individual pilot?

A. The Air Force system reduces many of the pilot's prerogatives we enjoy in the Navy. Because there are so many regulations, initiative in the younger pilots is temporarily blunted until they learn to cope with the system. In the Navy, we have minimal direction. Our younger aviators are faced with the everchanging and complex environment of the ship. So, they too are preoccupied initially, but for different reasons. In everyday terms, if a Navy and Air Force flight were approaching a target range and the weather was terrible, the Air Force range control officer on duty at the target (a rated pilot) would normally not permit the flight to enter the restricted area; the Navy flight leader could go take a look and make his own decision on whether or not to operate.

Q. Do you think this degree of standardization is good for safety and operational readiness?

A. From a safety standpoint, I'd have to say it's very effective. The Air Force has the safety record to prove it. If you limit exposure to hazardous situations, you bend fewer airplanes, You can go too far, however, and so limit exposure in the name of safety that you actually reduce the capability to perform effectively. A specific instance of this phenomenon was, during my tour (1973-75), low-level nav routes were restricted to no lower than 1000 feet. Safe, but hardly effective preparation for flying between the deck and 200 feet. (They have since adopted a more realistic 200 feet.)

Conversely, in the Navy, because of minimal restrictions, we do have the opportunity for more hazardous exposure and, consequently, bend a few more aircraft. The trade-off is that when we have to be there for real, we will have seen it before and, hopefully, be more effective, but with fewer total machines initially available.

Q. What was the hardest thing for you to adjust to in the Air Force?

A. I'd say it was the extensive body of regulations and the absolute insistence for compliance with those regulations. It is a formidable task to learn all the regs and how they apply. I recall a situation on my annual "Tac Check" where the scoreable target was closed for weather. I proceeded to the unscored tactical range, obtained a range time from the command post, and dropped the bombs using the prebriefed deliveries. IN the debrief, the checkpilot awarded me a "down" because I had performed an unbriefed alternate mission by using an unbriefed target, even though I had complied with all procedures peculiar to that range. His reasoning was that regulations specifically prohibited performing any maneuver or mission not specifically discussed in the brief. Proper procedure would have been to recover and reschedule the check. I thought completing the check was more important.

Q. You have mentioned deviations. What do you mean?

A. The Air Force works out a master schedule of maintenance and operations for a month at a time. This is resolved into a weekly schedule that delineates aircraft tail numbers, block times, mission, configurations, and pilots. Minor deviations from the schedule occur and are allowable. Major deviations are reportable to higher headquarters and are considered unfavorable. The goal of the wing is to minimize deviations while logging the necessary number of hours/sorties required to support the pilot population.

Q. How does this affect flight operations?

A. Because maintenance and operations are separate command functions, their day-to-day concern is to minimize their deviations in-house. There is not always agreement on who should buy a deviation, and this could result in the pursuit of separate goals. The wing boss usually motivates the players to a common goal. The rigidity of the system leads to some loss of local flexibility and responsiveness. I recall a situation where I was scheduled to lead a four-plane DCM ride. Careful preflight disclosed the presence of MERS and practice bombs, which would preclude any DCM training. When I requested the download, the initial reaction was that ops scheduled the ordnance, so we could fly the ordnance or ops cancel. Maintenance was initially unwilling to buy the deviation. The Matter was resolved, and we did eventually go flying on the scheduled mission with clean spares scheduled against an afternoon block.

Q. How about the quality of Air Force maintenance and its obvious bearing on safety. The Air Force pilot I talked with said he could have downed 50 percent of the aircraft he manned in the Navy, if he went by Air Force standards.

A. That may well be true, but again, it's a reflection of their philosophy as opposed to ours. They will normally operate on the side of safety. Their system of consolidated maintenance and preplanning provides adequate availability of truly full systems aircraft. You must remember, however, that most scheduled maintenance is subtracted from available assets prior to supporting a daily sortie rate. While this results in underutilization by our standards (if it's up, fly it), it does allow for an orderly program with a surge capability should the need arise. It alleviates a lot of crisis cannibalization and, therefore, could be considered safer. I was usually provided with clean, full system aircraft that broke down at the same rate as Navy A-7s. There were also times when we were cancelled because of nonavailability. As an added note, I should say that consolidated maintenance is a luxury of a permanently shorebased operation and could not meet the demands of shipboard ops.

Q. I can see how this would cut down on your missions, but it seems like a more organized system than ours, what with write-ins, add-ons, slide, and last-minute changes.

A. Their flying management system has a lot to recommend it. Their daily requirements are based on so many hours/pilot/month. Any flying in excess of this target is considered unnecessary. Consequently, you're not always required to fly every aircraft you own. Unscheduled maintenance can change this to some extent. Since pilots know several days in advance what they will be flying, they have more than enough time to adequately prepare for the mission. I have the feeling that Navy squadrons are always maxed out. Our philosophy seems to be that the enemy is perpetually storming the State of Liberty. We drive maintenance to give us as many up aircraft as possible; then we fly them as much as possible. Our goal seems to be "as much as possible." I feel it might be more beneficial to set realistic goals and plan to meet these goals, Would we lose rapid response, flexibility, and instant readiness? I don't think so, because the "operators" and not the "maintainers" would be setting those goals.

Q. What do you suppose would happen if the Air Force had to respond to a short notice operational requirement?

A. I can assure you from firsthand experience that the Air Force can have its squadrons ready to launch to any runway on earth in 24 hours. They practice mobility on a regular basis and must meet strict mobility requirements during every ORI. On a less global scale, their local response can be impressive. One night, I had just returned from a night bombing hop when the word was passed that a pilot had ejected on the range. Ops was launching some flare birds to assist in the search. Twenty minutes after we'd vacated the cockpit, those same birds were refueled, preflighted, and loaded with flare pods ready for launch. The normal scheduled turnaround is about 4 hours. So they can respond. However, the longer they stay maxed out, the tougher it gets to comply with all the regs.

Q. How do Air Force pilots stack up against Navy pilots? Do they fly their planes to the limit?

A. It depends on the experience level. There is no detectable difference, generally speaking, from middle grade lieutenants/captains on up. The junior pilots are where I noticed a difference, but it's not necessarily in stick and throttle ability. The Navy nugget is thrown out of the nest and required to do things a lot earlier than the Air Force nugget. Thus, the maturation process is more rapid in the Navy. The USAF can afford to bring its junior pilots along more slowly because they enjoy the relative stability of shorebased ops. They can and do leave junior pilots at the end of the runway if the weather falls below the minimums established for their experience level. We can't leave a pilot on the catapult if the weather goes below his minimums. We cannot afford to lock the deck because one pilot is less experienced than another.

Q. How would you feel about consolidated Air Force/Navy flight training?

A. I looked into that proposal with the Navy Advanced Training Command while on my exchange tour. There might be some merit to a combined program for the very first part of the program where all you learn is "stick back, airplane up," if it costs less than our current program. After that, we must go our separate ways. The system of safety through restriction affects an aviator's entire approach to flying. If we are going to continue to expect nuggets to perform at the ship without supervision on their first tour, then you must continue to give them the training, exposure, and latitude in the cockpit that we have in the past. The limitations used by the Air Force in UPT (Undergraduate Pilot Training) would not provide an adequate background to cope with the multiple variables of shipboard operations. Our separate philosophies in this area are really divergent. The Air Force believes in the universally assignable pilot with little or no initial regard for mission expertise. The Navy believes in the resident expert approach, which is ultimately reflected in the requirement to establish a warfare specialty (VA/VF, etc.) as a prerequisite for command. The UPT approach provides little mission skill. The multipipeline concept maximizes mission skill. Both systems can teach people to fly very well.

Q. How about money? Does the Air Force have the unlimited funds and resources that we Navy pilots think it does?

A. That is really a myth. I think it's more a matter of the operators putting the pressure where it's most effective. They do not try to skirt regulations or compensate for shortages in the name of simple sortie production. When we in the Navy succeed in circumventing material deficiencies, the problem area doesn't get much attention since the sortie completion rate has remained unchanged. In short, the operators have encouraged the "can-do shoestring" by failing to admit to themselves that there are times when "regret unable" would do us more good in the long run than "can-do." Our current system of values and rewards makes the more sensible approach untenable.

I took an Air Force detachment of four A-7s to Panama to fly close air support for the U.S. Army. During operations, the RSO (runway supervisor officer) cart UHF radio failed. The runway supervisor is required by regulation to be on station for every takeoff and landing, and he must have two-way communications with the departing and arriving aircraft. His function is to monitor takeoff and landing configurations and act as a procedure reference for any inflight emergency that may occur. His entire function is safety oriented. When the RSO radio failed, my first reaction was to press on and continue flying. Second thoughts dictated that I call back to headquarters for "guidance" (when in Rome, do as the Romans). I offered the alternative procedure of assuming RSO duties from the tower until the radio was repaired. The reply was to cease operations if suitable RSO facilities could not be maintained as required by the regs. The point is that they were willing to call off ops if they couldn't abide by regs concerning safety. When ops stop or slow

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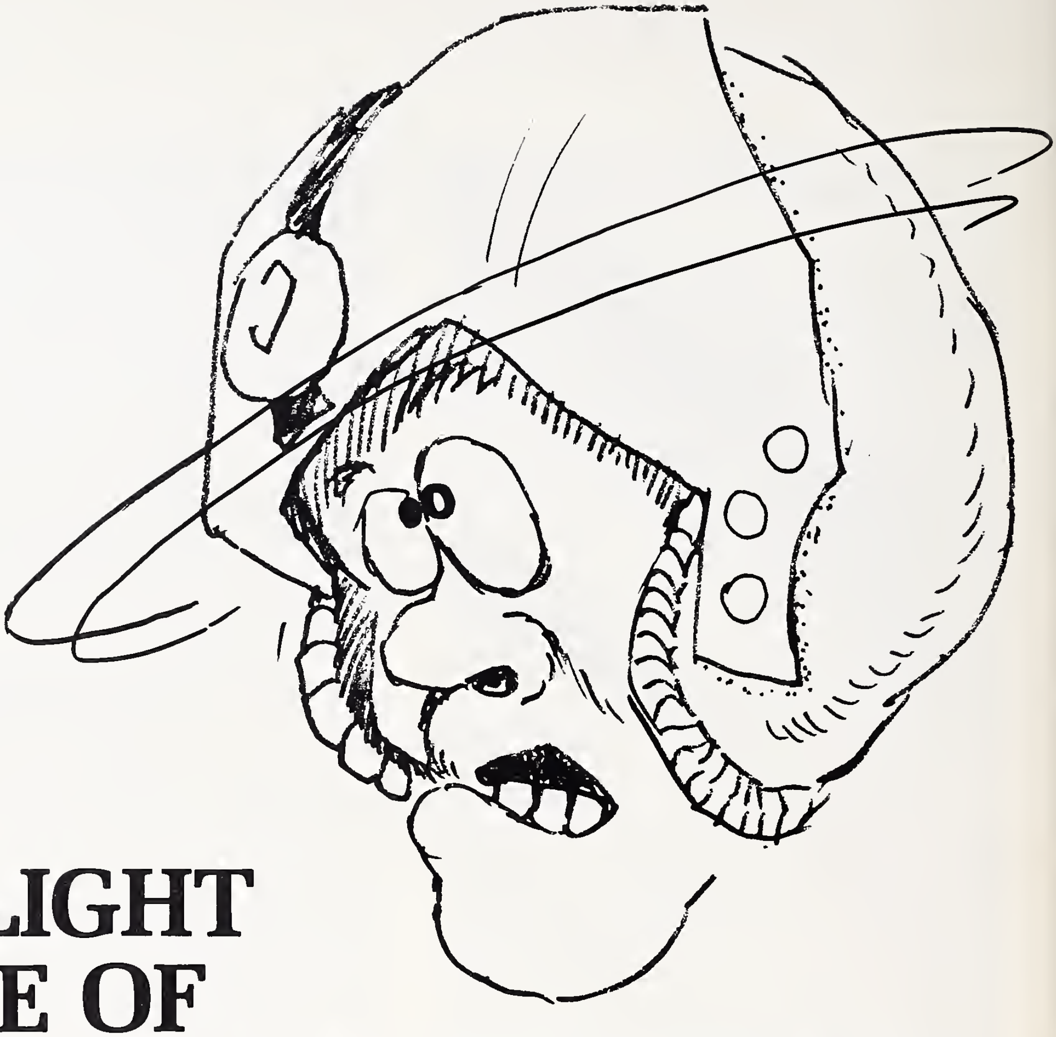


A SLIGHT CASE OF CONFUSION

Recently, a hazardous air traffic report was filed as the result of a mixup in communications, aircraft identification, and a declared emergency. Although the situation was rather unique, the safety implications are such that the incident deserves wide dissemination.

The principals involved in this scenario were Shark 17 and Pawk 17. While on a local training flight, the pilot of Shark 17 was informed that the field had gone below minimums. He executed a missed approach and requested clearance to Blytheville AFB. After being informed by approach control that the weather at Blytheville was below landing minimums, the pilot requested a climb to FL260 and vectors to Little Rock AFB.

Approach control cleared Shark 17 to climb to 9000 feet and to contact center for further flight following. When he contacted center the pilot again requested a higher altitude and vectors to Little Rock AFB. At this time, he informed the controllers that he would be declaring "emergency fuel" upon arrival at Little Rock, The center approved any altitude that the pilot wanted.

Approximately 50 miles east of Little Rock, Shark 17 was instructed to descend to 9000 feet at pilot's discretion and contact approach control. Approach then received Shark 17 as a "handoff" from center.

Meanwhile, the pilot of Pawk 17, on an IFR flight plan to another destination and on the same center frequency as Shark 17, heard the frequency change instructions for Shark 17 and thought they applied to him. Approach received contact from Pawk 17 and confused the call sign with Shark 17 as they issued instructions to descend to 2000 feet for vectoring to final approach course to Little Rock. Pawk 17 immediately replied thanks but he wasn't interested in landing at Little Rock since his destination was elsewhere. Approach control then issued instructions to Shark 17 to immediately climb to 10,000 feet and contact center for further flight following. (Stay with us, we may get this cleared up yet!)

Shark 17 (the real one) heard these instructions and informed approach control that he was "emergency fuel" and wanted an immediate descent for a precision approach to Little Rock AFB. Meanwhile, approach control and center were coordinating to eliminate the confusion. Finally, the light bulb blinked on, and both approach control and center realized they were handling **two different aircraft with two similar sounding call signs.**

The primary reason for the call sign confusion was from their similarity in sounds and the fact that Pawk 17 replied to instructions issued to Shark 17. This confusion was further compounded in that approach control only had a "flight following strip" on Shark 17. When the confusion was finally straightened out, Shark 17 was one mile out on final approach to Little Rock at 9000 feet. He subsequently landed safely, and although not mentioned, it is presumed that Pawk 17 flew happily and somewhat wiser on to his destination.

The following recommendations were made as a result of this hazardous incident.

- Aircrews should use their full call sign, instead of an abbreviated form, when responding to control facilities.
- Question air traffic controllers if instructions or clearances issued by them are different from what aircrews expect. They may be meant for another aircraft.

A NEW LEASE ON LIFE . . .

Continued from page 7

One of the technical challenges in the modification design was the maintenance of critical wing alignment and symmetry during the removal of the old wing lower surface and the installation of the newly fabricated modification kit. Wing bending occurs and torsional rigidity is lost when the wing lower surface is removed. Heavy steel overwing strong backs were used to solve this problem. The strongbacks also maintain the wing symmetry which insures that the aircraft trim and flying qualities are not degraded during the remanufacturing process. To maintain precise wing alignment, the support structure is periodically checked by transit measurement during the kit installation process.

Once the parts are fabricated, the installation process takes approximately 32 days to complete. The first eight days are used to defuel and prep the aircraft for the modification. The aircraft is positioned in the hangar, and the main landing gear, engines and struts, flaps, air conditioning equipment and fuel cells are removed. Then the inboard skin is removed, and new strut fittings, rib and spar chords are installed. The center wing panels and spar chords are also removed. The next 14 days are spent installing the new inboard and center wing panels. Major components such as engines and main landing gear are then reinstalled. The remaining 10 days of the modification cycle are used for painting, operational check of disturbed systems, flight test and delivery.

Mankins pointed out that "based on present utilization rates, the current schedule calls for a gradual buildup in aircraft modified — one aircraft output per month through 1977, three aircraft per month from 1978 into the mid-1980s. This is a large fleet of aircraft; therefore, the modification scheduling is being approached systematically."

Aircraft are scheduled to be modified at approximately 11,500 tanker equivalent flight hours. By the end of August 1977, 14 ECP 405 modifications (10 SAC aircraft) will have been completed.

As the 405 modification is completed on each 135, that aircraft will be a safer and more reliable aircraft to fly and it also will have a significantly increased value in terms of useful life. The ECP 405 modification is one of several programs and plans that are in progress to upgrade and modernize the 135 fleet. A new electrical system, new engines and an advanced refueling boom are new major aircraft components that eventually may be installed in the 135 fleet. With the completion of the ECP 405 modification and other modernization programs, the 135 will probably be flying well into the 21st century.

449 BMW crew being greeted upon arrival at RAF Marham by Air Vice Marshal P. J. Lagesen, Air Officer Commanding, RAF 1 Group. (L-R): Captain David B. Hauser, aircraft commander; Captain Raymond B. Yoh, Jr., radar navigator; 1Lt Randall B. Bowlby, navigator; Air Vice Marshal Lagesen, and Group Captain Parry-Evans, Marham Station commander.

SAC CREWS COMPETE IN GIANT STRIKE VII

In May the Strategic Air Command participated in the Royal Air Force Strike Command's Bombing and Navigation Competition, Giant Strike VII. As usual, the British were superb hosts and they showed our crews and support personnel outstanding hospitality, warm comaraderie and fierce competition. For practice missions and scored events, our four crews, as well as the RAF tanker competitors, operated out of RAF Marham UK. Each bomber crew flew two identically sequenced day profiles that included three low level bomb runs.

Simulated bomb releases were scored by RBS sites in the UK and significant mission factors were converted to points which determined final standings and awards.

One of SAC's objectives in the competion was to exercise the command's capability to deploy operational forces to a forward operating location and to begin sustained air operations. The competition itself is designed to test the operational standards and the skills of our crews and squadrons. SAC crews were competing for the following major Giant Strike awards.

- The Blue Steel Trophy — is won by the air force whose crew scores the highest score in bombing.
- The Camrose Trophy — awarded to the team that scores the most points in low level bombing.

The Royal Air Force Bombing and Navigation competition dates back to 1926 when a trophy was awarded to the RAF in honor of Captain Laurence Minot who was killed in WWI while serving with the RAF. The original trophy was awarded to the best crew in visual bombing in competition between other RAF bomber squadrons. However, in 1955 the visual bombing feature was updated and changed in radar bombing. Competition continued each year through 1956 with a break during the WWII years.

SAC first participated in the British competition at Brize Norton in 1958 with six B-52Ds and crews from the 92BMW at Fairchild. In the 1958 competition the 92d won five of six awards for which it was eligible to compete. In 1960 crews of the 6BMW from Roswell participated with six B-52Es and won best unit award in combined areas of bombing and navigation. Individual crews also won top awards in bombing and in combined areas of bombing and navigation.

No competition was held in '64, '66, '69, '74 and '75.

From 1970 through this year's event our crews have continued to score well in the spirited Giant Strike competition.

In 1970 the 319th, 320th, and 379th put it together and won the Blue Steel Trophy for the best combined score in bombing and navigation. In 1971, the 410BMW from K.I. Sawyer won the Blue Steel Trophy for SAC and for the first time the 340 Bomb Group and the 509BMW each sent an FB-111 to participate in a demonstration capacity.

The 2d, 17th, 28th and 449th Bomb Wings participated in 1972 and the 28BMW from Ellsworth captured the Blue Steel Trophy for the Command. In 1973, the 5th, 17th, 319th and 410th Bomb Wings participated and in that competition SAC units placed second, seventh, eighth, and ninth overall.

Over the years, SAC has established a noteworthy record in Giant Strike competition. Last year, our crews captured the Blue Steel Trophy for the fourth time and they also won the Camrose Trophy — a first for a SAC crew in Giant Strike competition.

This year, however, Royal Air Force units avenged last year's loss of the Blue Steel and Camrose Trophies with victories over our crews in the competition.

B-52 crews from the 410BMW, K. I. Sawyer AFB, 5BMW, Minot AFB, and 449BMW, Kincheloe AFB placed fifth overall in team competition for the Camrose Trophy.

The Kincheloe crew placed second in the Blue Steel Trophy competition. Finishing behind Kincheloe for the Blue Steel were the 410BMW in fourth place, the 319BMW, Grand Forks AFB in tenth place, and the 5BMW in 20th place.

The following competitors represented SAC in this year's competition.

5 BMW, Minot AFB: P Capt Robert W. Kopp, CP Capt Gerald W. Dunn, RN Capt Murry P. Gandy, N 1Lt Kenneth G. Teepell, EW Capt Jon J. Hansbrough, G SSgt Paul R. Hederman.

319 BMW, Grand Forks AFB: P Capt William H. Ham, CP 1Lt Randall A. Panisello, RN Capt Agu Medvedev, N 1Lt Neil M. Hilton, EW Capt Donald F. Hanson, G Sgt Glen S. Cragg.

410 BMW, K. I. Sawyer AFB: P Capt Rodney D. Bosserdet, CP 1Lt Harold R. Adams, RN Capt Arthur P. Romzek, N 1Lt Harold W. Grace III, EW 1Lt James A. Tompkins, G Sgt Paul J. Carstens.

449 BMW, Kincheloe AFB: P Capt David B. Hauser, CP Capt Michael H. Rolbeck, RN Capt Raymond B. Yoh, Jr., N 1Lt Randall B. Bowlby, EW Capt Larry G. Jacobs, G SSgt Terrance J. Hughson.

In addition to four SAC B-52Gs, 18 Vulcan bombers, nine Victor tankers, and three Vulcan reconnaissance aircraft also participated in Giant Strike VII.

Excellence is the name of the game in any competition and the Giant Strike VII was no exception. Excellence was apparent in every facet of the RAF's preparation and execution of the competition. Excellence was obvious in the performance of each RAF and SAC competitor.

Once again, hats off to our hosts, the RAF, for staging such a fine event.

Captain Hauser's crew from the 449 BMW places second in competition for the Blue Steel Trophy. Crewmembers are (L-R): SSgt Poland, crew chief; TSgt Terrance J. Hughson, gunner; Captain Larry G. Jacobs, EWO; Captain David B. Hauser, aircraft commander; Captain Michael H. Rolbeck, copilot; Captain Raymond B. Yoh, Jr., radar navigator; and 1Lt Randall B. Bowlby, navigator.

BIG INSTRUMENT

ASR APPROACH

Captain John L. Wilson
1st Combat Evaluation Group
Barksdale AFB

We have received numerous questions concerning recommended altitudes on final approach during ASR approaches, such as: what are they for, how they are used, and what can they do for the pilot. There is nothing magical or mysterious about the altitudes the controllers call, and properly used, they can make the ASR approach easier and smoother to fly.

Q. What is the purpose of the recommended altitudes?

A. These altitudes are provided to assist in establishing a descent rate that will place the aircraft at MDA, at or prior to, the missed approach point. Since the final approach fix(FAF), FAF altitude, and missed approach point are not published, you cannot preplan a descent gradient or rate prior to flying the ASR. By comparing the actual aircraft altitude against the controllers recommended altitude, some of the guess work on the proper descent rate will be eliminated. From this comparison, you should be able to adjust the rate of descent accordingly.

Q. If I fly the controllers altitudes, won't I reach MDA and the missed approach point simultaneously?

A. Not necessarily. The controllers altitudes are based on a descent gradient determined by using the difference in the altitude from the FAF to the runway touchdown zone elevation, divided by the distance from the FAF to the end of the runway (see Fig.). This gradient is then used to determine the altitude (in feet MSL) for each mile on final. The controllers will not call any altitudes below MDA (for instance, the 1 mile point in the Fig.). Flying the controllers altitudes will generally place the aircraft at MDA prior to the missed approach point, but in no case will the recommended altitudes cause you to reach MDA past the MAP.

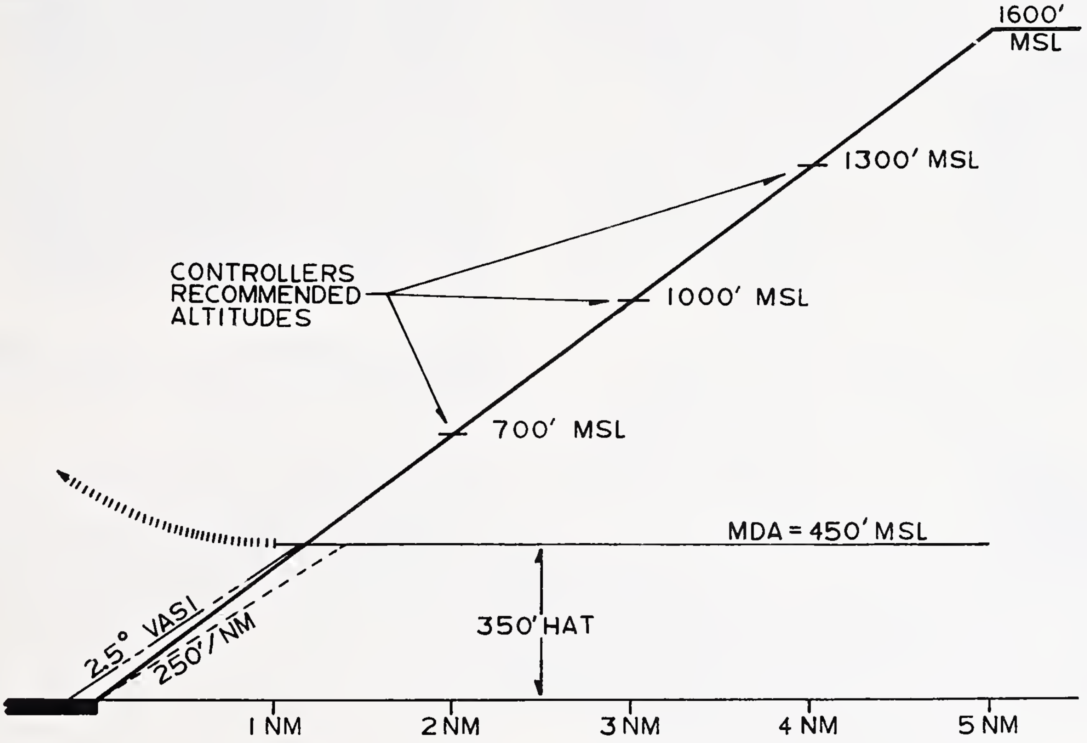
Q. Since I cannot determine a descent rate before flying the approach, is there an approximate rate to use until the controller calls the first altitude?

A. The normal maximum descent gradient for ASR approaches is 300 feet per NM, although it can be as much as 400 feet per NM. Initially, a 3 to 4 degree pitch change (750 to 1000 feet per minute at 150 kts ground speed), will place you close to the controllers first altitude. When you reach the first mile after the FAF, compare the aircraft altitude with the recommended altitude and make a pitch correction, if required.

Q. How close should I be to each of the recommended altitudes?

A. The intent of the recommended altitudes is to assist in accomplishing a comfortable, safe descent to MDA, not to make the ASR into a precision approach. During a typical ASR, you will only receive three altitude calls during the final approach (see Fig.), whereas, during a PAR you will receive 20 or more glide path calls. Controlling the descent rate in an attempt to align the aircraft close to the recommended altitudes can prevent a too shallow or too steep approach. A shallow descent can result in not reaching MDA by the missed approach point. A steep descent can place the aircraft at MDA too far from the runway requiring large pitch and power changes to level the aircraft and drive to the visual descent point. An early arrival at MDA can increase the potential for spatial disorientation if visual flight to the runway is attempted in marginal weather conditions.

It is important to note (1) the difference between the recommended altitude and aircraft altitude and (2) the altitude trend between two consecutive calls. A relatively large altitude difference (100 feet or more) would call for a pitch correction. An initially



TYPICAL ASR APPROACH

small altitude difference (50 feet or less) may not require a pitch change. But if at the next mile the difference increases, you would be trending away from the descent path and should make a pitch correction to reverse this tendency. Remember, you are trying to establish a descent rate that will place the aircraft at MDA in sufficient time to identify the runway environment, and descend from MDA to touchdown at a normal rate. With this in mind, and by remaining fairly close to the recommended altitudes, only small pitch corrections should be required. Abrupt or large pitch changes should never be necessary unless large altitude deviations are noted. In this case, a missed approach may be the wisest decision.

Q. Is there a Visual Descent Point (VDP) associated with ASR approaches? How should it be used?

A. A specific VDP will not be designated and published with ASR approaches, but you can determine a point at which you should be in the vicinity of a normal visual glide slope. Simply divide the HAT by the VASI glide slope times 100 (see July 77 Big I). This distance, in NM, is approximately the point where a transition to landing would be started if the runway environment is in sight, and you have clearance to land. You should plan on arriving at MDA at or a little prior to this computed descent point. This may require a small altitude deviation below the controllers last recommended altitude, but it will normally be less than 100 feet. Since no positive method exists to estimate how much below the descent path to be, or exactly when you reach the point for visual descent, pilot judgment must prevail.

In summary, the following are some techniques to use during ASR approaches.

1. At the start descent point, make a 3 to 4 degree pitch change (750 to 1000 fpm at 150 kts GS).

2. At each mile compare the aircraft and recommended altitude and make appropriate pitch changes to stop or reverse any adverse trends.

3. Plan on arriving at MDA at or prior to the point required to identify runway environment. Do not descend below MDA until the runway environment is in sight and the aircraft is in a position for a normal, safe landing.

4. If at any time you are not sure the approach or landing can be completed safely, GO AROUND.

A Naval aviator...

Continued from page 13

down, there is no lack of visibility, and required materials is usually forthcoming. This is a tenable response because they reward commanders who follow the regs. They also have cleverly written their materials requirements into the regulations.

Had this been a Navy operation, I feel we would have done without the radio and continued operations. The sortie rate would remain unchanged, and the local operators would complain about never having the right equipment available to do the job properly.

Q. What Air Force concepts would you like to see adopted by the Navy?

A. During flight ops, the Air Force has several layers of supervision in effect in addition to the pilot on command. They are the runway supervisory officer, supervisor of flying, and range control officer. These people are responsible to the wing boss for the orderly and safe execution of the flight schedule. If a study could demonstrate that these additional levels of shorebased supervision are effective in reducing accident potential, then we should at least investigate them. NATOPS checks and written examinations could be conducted by an agency external to the command to improve their objectivity.

Q. How can the Navy improve its formal accident prevention program?

A. One way would be to get more objective accident board reports by changing our investigation procedures. Accident investigations might be conducted by boards composed of people external to the command that suffered the accident. The command should have a representative on the board, and the usual endorsing procedures could remain in effect. The Navy tends to use the "white hat" approach to safety. We bend over backwards to prevent casting a bad light on the pilot or command in question. Even when serious fault is identified rarely does anything more than a wrist slap occur. There is no real deterrent to supervisory error. The Air Force uses the "black hat" approach. When investigators identify serious supervisory error as a major contributing factor to an accident (and they do in about 35 percent of the cases), recommendations are made that will normally result in those personnel responsible for the discrepancies being relieved. Not an altogether happy thought, but powerful motivation to comply with all regulations and requirements. Hence, you don't find anybody missing instrument school, simulators, etc.

Q. What would this type of philosophy do to the voluntary contribution of information the Navy encourages in its accident investigations?

A. It might inhibit it to some extent. But with today's state of the art, we really don't have to rely that heavily on survivors' statements when the wreckage can be recovered. In the case of fatality and unrecovered wreckage, the records would have to do most of the talking. I'm not convinced that we get much voluntary information that's worth anything. In a recent fatal accident, the pilot was endorsed as having exceptional qualifications. The undercurrent of professional opinion was that he was not a strong aviator. Had this previously been made known to the proper people, the accident might have been prevented.

Q. Did you enjoy your duty and find it worthwhile?

A. Most emphatically, yes! It provided me with a whole new experience in aviation and exposed me to new concepts that were very worthwhile.

Q. Do you have any other suggestions for improving the exchange program itself?

A. If the word "exchange" is to be meaningful, then exchange pilots returning to the parent service and community should be required to provide a worthwhile debrief so that new ideas can be explored. If we are going to get the most out of the program, we should be above petty, interservice jealousies and listen closely to suggestions, regardless of where they come from. There are several outstanding examples of this effective exchange. The Navy A-7 community has adopted the Air Force concept of time-critical emergency procedures. The Air Force and Air National Guard have just recently adopted the Navy A-7 departure training program. virtually verbatim from the VA-174 syllabus. While I was with the 76th, we developed an entirely new approach to defensive A-7 tactics which was subsequently adopted as a standard wing tactic. The people I worked with were most receptive. Somewhere out there in Air Force land is a point paper recommending the introduction of touch-and-go landings for Air Force A-7s as a means of improving junior pilot proficiency. I have high hopes that it is receiving serious consideration. (Gary, keep on truckin'.)

Q. One final question: Are you glad to be back in a Navy Fleet squadron?

A. I think flying an aircraft off and on a ship is the greatest physical thrill you can have (well, almost). In addition, I firmly believe that seaborn tactical air power is the leading edge of the U.S. conventional deterrent, and, as such, we play a vital role. (The reader may now have recognized a slight loss of objectivity!) With job satisfaction like that, you gotta like driving to work in the morning. I'm glad to be back, Now, if we could just wear our flight jackets . . . *Thanks to Approach.*

Next month an Air Force pilot talks about Navy operations

MISSILE MISHAPS

QUAIL – A RUBBER DIET

During a Quail engine run on the test cell, two compressor stalls occurred during the maximum power check. The engine was immediately shut down. When the inlet screens were removed, an 18-inch piece of rubber from the inlet cover screen was found missing. The glue which secures this rubber to the screen had apparently failed during the maximum power check and allowed the rubber to be ingested. The first stage inlet guide vanes and compressor blades were damaged. As a result of this mishap, Interim Operational Supplement 21M-ADM20C-2-1S-7 was issued to require a soft rubber (P/N 8635967) be used on the inlet screen bell mouth seal.

LOOK OUT BELOW AGAIN!

A Minuteman team was lowering a workcage into the personnel access hatch using a manila rope with snap hook and portable hoist. While lowering the workcage, the snap hook broke and the workcage fell to the bottom of the personnel access hatch. Investigation revealed the snap hook (P/N C5593236, FSN 5340-00-780-6590OAH) was not an approved lifting device. It is used in Minuteman as a "circuit breaker locking device." It was not designed for raising and lowering equipment. Moral: Use only authorized equipment to lower/raise equipment. Otherwise, what goes down in one piece may come back in several pieces.

INSTRUCTIONAL TELEVISION • SOUND/SLIDE • PUBLICATIONS

OTSL TRAINING TOPICS

... A SYNOPSIS OF NEW PROGRAMS FOR SAC AIRCREW TRAINING

Have you met the latest addition to your wing staff — the WISM? All flying units within SAC now have an individual known as the Wing Instructional Systems Manager. The WISM is responsible to the unit director of training for the quality of aircrew academic training. Besides ensuring that aircrews receive their academic training, he also assists instructors with lesson plans and teaching techniques. Since he reviews the critiques all 4235 ISDS products, provide him with any comments or suggestions you might have regarding the current programs or the need for additional programs.

OTSL hosted the annual SAC Air Weapons Seminar for 26 officers from throughout the command. They were briefed on the B-77 operational tests and results, the ALCM, SRAM B, new naval mines, and the BDU-8. You crewmembers will soon be receiving training on the BDU-8. The seminar made numerous recommendations for the T.O. 1B-52D-34-2-1 revision currently in progress. When adopted, this new tech order will be in a more logical format with standardized terminology and contain information on current non-nuclear munitions. Discuss with your unit air weapons officer other proposed changes in the weapons and security areas.

Here are the most recent videotapes from the television studio. (NOTE: Programs are unclassified unless otherwise indicated)

1. "Engine Condition Monitoring" — provides an explanation of the SAC program to improve the reliability of jet engines. Through a cooperative effort between flight crews and maintenance personnel, information from cockpit instruments is processed to detect imminent engine problems. Detection of these problems before they become significant enough to cause an inflight problem or to be detected by the flight crews improves engine reliability and flight safety. Procedures for recording inflight instrument readings are shown as well as how this data is used by maintenance.

2. "SAC Simulation Briefing Update" — the second of a series designed to give an overview of the progress being made in flight simulation. It provides an update to the procurement milestones for new simulation equipment. The program includes a detailed description of current visual scene generation systems available.

3. "Graphic Instructions for Sound/Slide" — discusses a very simple and inexpensive method of producing your own camera-ready slide masters using "Triangle Man." It identifies the equipment needed, the method of drawing the artwork, and the final assembly of the art master. A supplement to the program consists of three sample sheets of (1) how to construct the "Triangle Man," (2) multiple facial expressions, and (3) different hand positions. These master sheets can be reproduced for tracing or as a sample guide. The program is invaluable for anyone wishing to produce his own sound/slide programs without the assistance of an artist or illustrator.

4. "Radar Bomb Scoring Operations" — presents RBS mission operations from initial aircrew call-in through final score validation at Hq 1st CEVG. It defines parameters for developing an ORI route to assess aircrew and aircraft systems performance toward successful accomplishment of the EWO mission.

5. " 'Okean': A Look at a Soviet Naval Exercise" — this program, narrated in Russian, shows the first world-wide Soviet naval exercise in history. It does not fulfill the requirements for naval ship recognition; however, it does provide an excellent orientation and awareness for crewmembers.

6. "EWP 1-1, Electronic Warfare Principles, Parts VI, VII and VIII" — these are the last three SECRET programs in an eight-part review of enemy threat systems and associated electronic countermeasures equipment. Part VI discusses improvements to existing ECM equipment and follow-on systems for all models of the B-52 and the FB-111. Part VII covers the vulnerabilities of radar systems and methods for aircrews to exploit these vulnerabilities. Part VIII summarizes the preceding programs by depicting a typical EWO mission from penetration of enemy defenses through withdrawal. Separate Part VIII programs were produced for the B-52 and FB-111.

7. "FB-111 Egress" — discusses and demonstrates all normal and alternate egress procedures. It reviews secondary pitot-static system failure, ejection and before landing postures, and capsule limitations.

8. "SAC Hanger Flying #5, Accident/Incident Analysis" — compares the B-52H accident in May 1974 with the B-52H incident in February 1977. The pilots involved are interviewed and discuss flying the B-52 without rudder/elevator.

Now that the new 4235 ISDS Catalog dated 1 March 1977 is available through your WISM, examine its contents and determine what we have that can improve your training program. If we can provide additional assistance, call the appropriate autovon number listed in the catalog.

Combat Crew Reader Response Form

Please answer the following questions and forward to ***Combat Crew*** Magazine

1. How many issues of ***Combat Crew*** have you seen in the past year? Circle one:

   1 2 3 4 5 6 7 8 9 10 11 12

2. How soon after publication do you usually see an issue of ***Combat Crew*** ?
Check one: ☐ Same month ☐ One month later ☐ Two months later ☐ Never see a copy.

3. How do you usually receive a copy? Check one: ☐ Through normal distribution.
☐ From someone else. ☐ See it in the work center. ☐ Rarely see a copy.

4. Please indicate your response to the following quality and readability of the articles and features.

	EXCELLENT	GOOD	FAIR	POOR
EDITORIAL				
FLYING SAFETY				
MISSILE SAFETY				
BIG INSTRUMENT				
CREWVIEWS				
MAINTENANCE				
OPS HAZARDS				
MISSILE MISHAPS				
BOMBING, MISSILE AND MUNITIONS COMPETITION				
PROFESSIONAL PERFORMERS				
SAC SAFETY SCREEN				
HALL OF FAME				

5. Have you gained any additional safety awareness by reading ***Combat Crew*** ? ☐ YES ☐ NO. How well do you think ***Combat Crew*** gets the safety message to the SAC combat crew member? ☐ EXCELLENT ☐ GOOD ☐ FAIR ☐ POOR

6. Graphic Presentation (art work, photos, etc.) ☐ GOOD ☐ FAIR ☐ POOR ☐ CAN BE IMPROVED
If so, how?

7. Please indicate ways the staff of ***Combat Crew*** can better serve our readership, the SAC combat crewmember.

My Air Force Job Is

CUT ALONG SOLID LINE

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SAC SAFETY SCREEN				
HALL OF FAME				

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My Air Force Job Is

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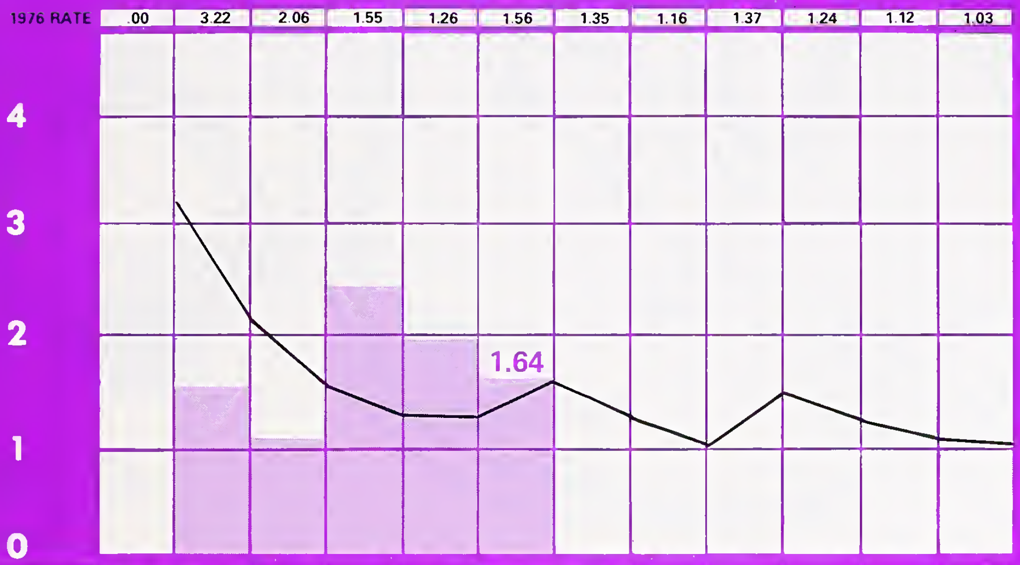
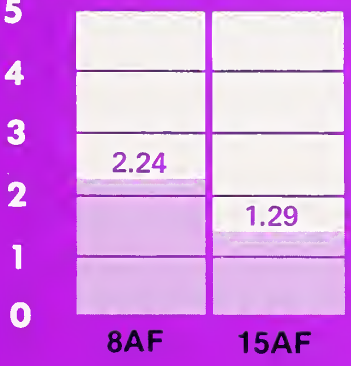
1977 Flying Safety Rate

SAC CLASS A MISHAP RATE (PER 100,000 FLYING HRS)



MISHAPS	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1976	0	2	0	0	0	1	0	0	1	0	0	0
1977	0	1	0	2	0	0						

1977 SUBORDINATE CMD RATES

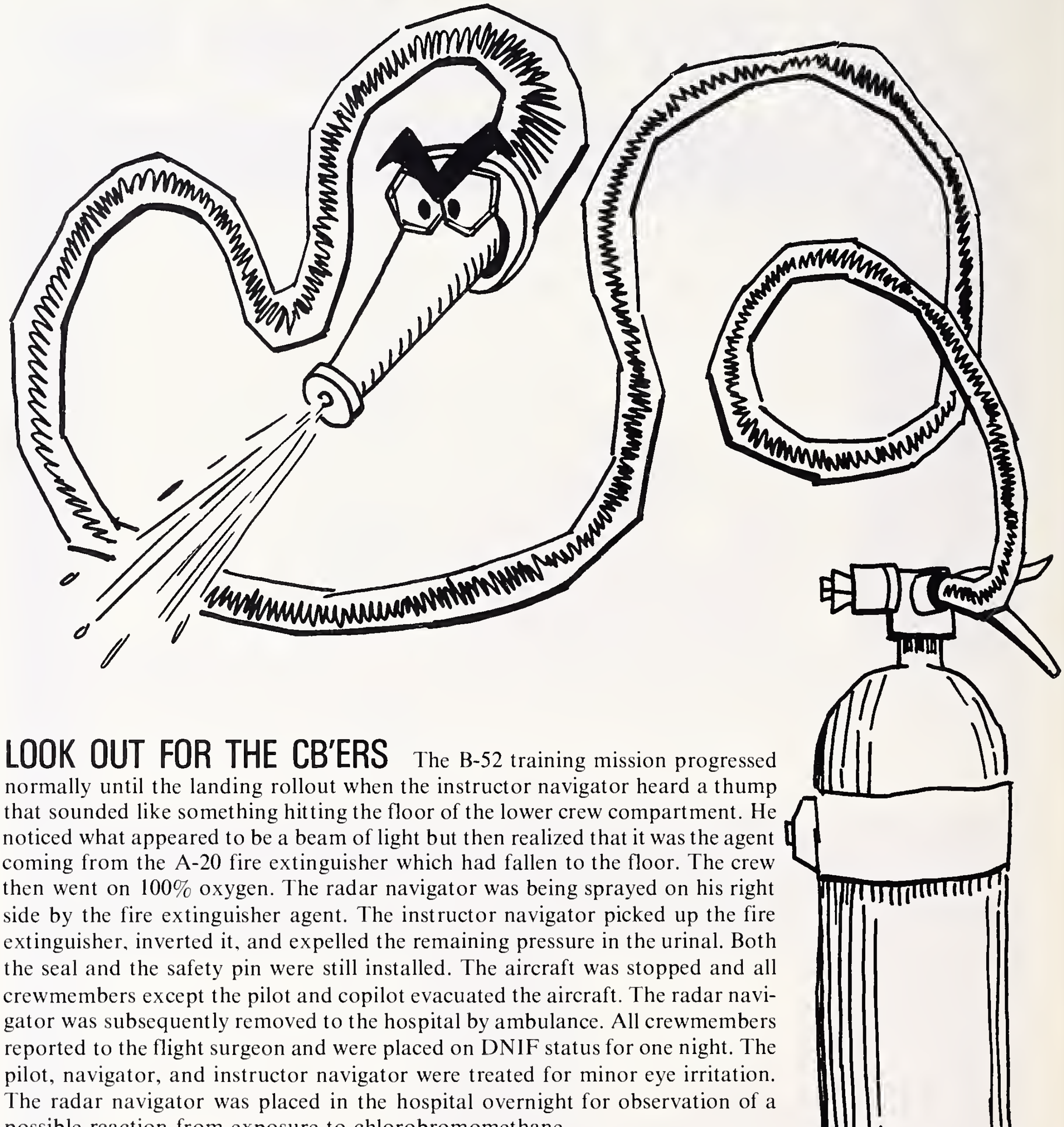


MISHAP STATUS

FB-11	FEB 77
B-52	APR 77
KC-135	APR 77

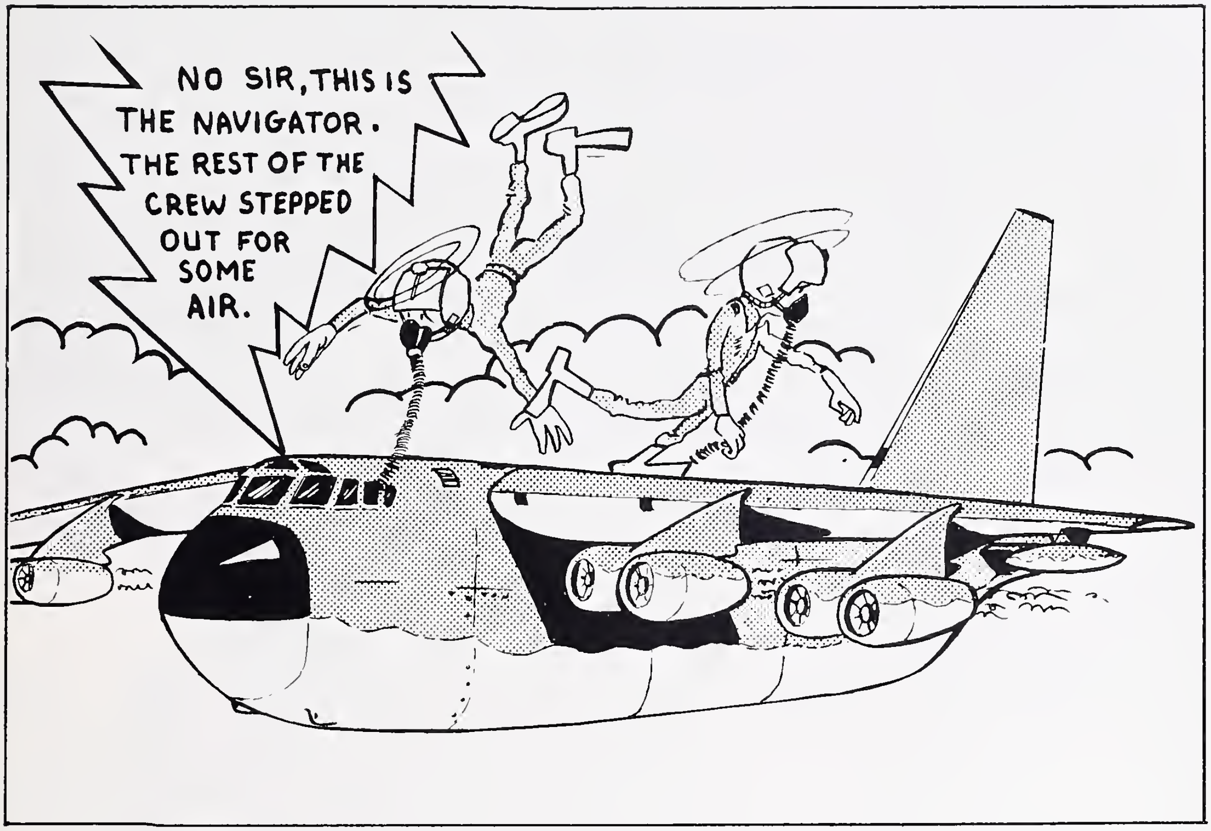
LEGEND ⁀ =1976 RATE

OPS HAZARDS



LOOK OUT FOR THE CB'ERS The B-52 training mission progressed normally until the landing rollout when the instructor navigator heard a thump that sounded like something hitting the floor of the lower crew compartment. He noticed what appeared to be a beam of light but then realized that it was the agent coming from the A-20 fire extinguisher which had fallen to the floor. The crew then went on 100% oxygen. The radar navigator was being sprayed on his right side by the fire extinguisher agent. The instructor navigator picked up the fire extinguisher, inverted it, and expelled the remaining pressure in the urinal. Both the seal and the safety pin were still installed. The aircraft was stopped and all crewmembers except the pilot and copilot evacuated the aircraft. The radar navigator was subsequently removed to the hospital by ambulance. All crewmembers reported to the flight surgeon and were placed on DNIF status for one night. The pilot, navigator, and instructor navigator were treated for minor eye irritation. The radar navigator was placed in the hospital overnight for observation of a possible reaction from exposure to chlorobromomethane.

Investigation revealed that latching mechanism on the bracket holding the A-20 fire extinguisher operated with very little effort. In addition, the location of the fire bottle in the lower crew compartment and the ease with which the latch operated, allowed the latch to become opened by simply brushing against the latch while entering or exiting the navigators' seats. The plastic safety pin broke when the fire extinguisher landed on the handle, this in turn allowed the fire extinguisher to discharge its contents.


NO SIR, THIS IS THE NAVIGATOR. THE REST OF THE CREW STEPPED OUT FOR SOME AIR.

PHYSIOLOGICAL INCIDENT

The B-52 air conditioner was turned on during the climb checklist and the cabin pressure began to increase toward sea level. The air conditioning switch was cycled to off and then back on. When turned back on, the system continued to drive the cabin altitude toward sea level. The air conditioning was turned off and the climb continued towards FL 250 with all crewmembers on 100% oxygen.

The pressurization problem was recognized early in the climb. Because of the air conditioning problem, all crewmembers had remained on oxygen continuously. Shortly before arrival at FL250 the pilot announced that he suspected he was experiencing hypoxia symptoms. The gunner announced that he too might be experiencing hypoxia symptoms. At this point, an emergency descent was made to 10,000 feet.

After the descent, the pilot quickly began feeling normal. The gunner's recovery was not as rapid so the descent was continued to 5000 feet. At that point, the gunner reported that he was feeling normal.

During fuel burnoff, the crew discussed the problem and all crewmembers indicated that they might have experienced hypoxia symptoms to some degree. The aircraft landed and was met by maintenance, safety and the flight surgeon.

All crewmembers were taken to the hospital immediately for medical testing and evaluation, and all were released approximately two hours later. An oxygen sample was taken to determine the possibility of contamination, and the aircraft oxygen system was checked for leaks. The oxygen lines were intact, but there was a definite odor in the oxygen sample which indicated suspected oxygen contamination from an unknown source.

Investigation revealed that there was evidence of contamination from an unknown source and that there was a possibility of transient hypoxia. The symptoms experienced by the crewmembers could have also been caused by an unknown contaminant and hyperventilation.

FLYING CREW. 191 AREFS, Utah ANG, (L-R): IN Lt Col Sherman A. Culp, FE TSgt Marty E. Payne, P Capt Jeffrey J. Linder, BO MSgt William A. Parker, N 2Lt David M. Combe, CP Capt Jon C. Heaton, (151 AREFG).

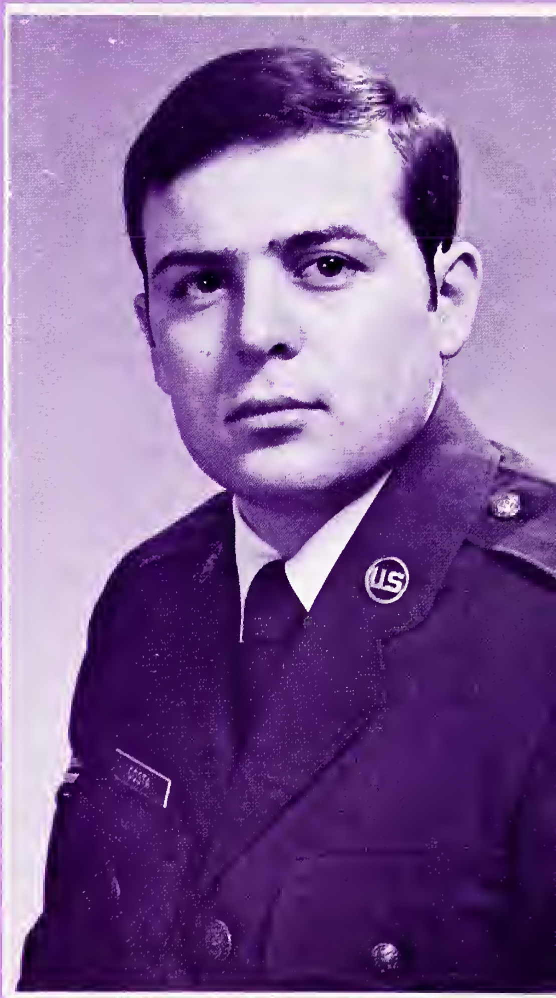
PROFESSIONAL PERFORMERS

TITAN Crew R-072, 390 SMW, Davis-Monthan AFB: MCCC Capt Martin T. Harrison, DMCCC 2Lt Ronald L. Cook, MSAT SrA Farmborn M. Guillermo, BMFT A1C David A. Witt.

MAINTENANCE MAN. TSgt Jerry L. Fath, 43d Munitions Maintenance Squadron, Andersen AFB.

Individuals selected for these pages as SAC's top professional performers of the month are chosen from nominations made by all SAC units. Selection is made only after all nominations have been carefully screened and those chosen meet the highest standards of excellence as outlined in SACR 127-2.

MINUTEMAN Crew E-113, 90 SMW, F. E. Warren AFB: MCCC Capt Lawrence C. Hallauer, DMCCC 2Lt Robert E. Kuntz.



MAINTENANCE MAN. A1C David R. Costa, 416th Bomb Wing, Griffiss AFB.

HALL OF FAME

TACTICAL FLYING

OVER TWENTY-ONE YEARS

170 AREFG, McGuire (NJANG)	NONE

OVER NINETEEN YEARS

171 AREFW, Greater Pittsburgh (PAANG)	Mar '58
157 AREFG, Pease (NHANG)	Jun '58

OVER EIGHTEEN YEARS

97 BMW, Blytheville	Aug '58
940 AREFG, Mather (USAFR)	May '59

OVER SEVENTEEN YEARS

307 AREFG, Travis	Sep '59

OVER SIXTEEN YEARS

19 BMW, Robins	Oct '60
151 AREFG, Salt Lake City (UTANG)	Feb '61
161 AREFG, Sky Harbor (AZANG)	Apr '61
126 AREFW, Chicago O'Hare (ILANG)	Apr '61

OVER FIFTEEN YEARS

134 AREFG, McGhee Tyson (TNANG)	Aug '61
340 AREFG, Altus	Feb '62
301 AREFW, Rickenbacker	Jul '62

OVER FOURTEEN YEARS

96 BMW, Dyess	Aug '62
449 BMW, Kincheloe	Aug '62

OVER TWELVE YEARS

160 AREFG, Rickenbacker (OHANG)	Dec '64
136 AREFW, Dallas NAS (TXANG)	Jun '65
320 BMW, Mather	Jul '65

OVER TEN YEARS

452 AREFW, March (USAFR)	Sep '66
92 BMW, Fairchild	Feb '67
55 SRW, Offutt	Jul '67

OVER NINE YEARS

2 BMW, Barksdale	Aug '67
319 BMW, Grand Forks	Dec '67
22 BMW, March	Feb '68

OVER EIGHT YEARS

5 BMW, Minot	Feb '69

OVER SEVEN YEARS

42 BMW, Loring	Sep '69
141 AREFW, Fairchild (WAANG)	Oct '69
28 BMW, Ellsworth	May '70

OVER FIVE YEARS

7 BMW, Carswell	Mar '72
101 AREFW, Bangor (MEANG)	Mar '72
416 BMW, Griffiss	May '72

OVER FOUR YEARS

305 AREFW, Grissom	Aug '72
376 SW, Kadena	Nov '72
379 BMW, Wurtsmith	Apr '73

ICBM

OVER THIRTEEN YEARS

381 SMW, McConnell	Nov '63
90 SMW, F E Warren	Jul '64

OVER TWELVE YEARS

1 STRAD, Vandenberg	Sep '64

OVER ELEVEN YEARS

308 SMW, Little Rock	Aug '65

OVER SEVEN YEARS

341 SMW, Malmstrom	Apr '70

OVER FOUR YEARS

390 SMW, Davis-Monthan	Jul '73

To gain listing in the Hall of Fame, a SAC or ARF unit must be Class A mishap-free for 48 months.

SAC SAFETY SCREEN

2 BMW, Barksdale Crew E-05: P Capt Edmond S Moreland, CP 1Lt Samuel Robinson Jr, RN Capt James B. Houston Jr, N 1Lt David A Pickett, EWO 1Lt James F Powell, G MSgt James C Collis

44 SMW, Ellsworth Crew E-089: MCCC 1Lt Frank E Metrusky, DMCCC 1Lt Carl L Hamblin

55 SRW, Offutt Crew S-03: P Capt Richard L Bender, CP 1Lt William W Josephson, Nav 1 Maj Peter B Mangum, Nav 2 Capt James C Deshields

91 SMW, Minot Crew E-001/R-074: MCCC Maj George M Daly, DMCCC 1Lt Lonnie D Crawford

96 BMW, Dyess Crew E-04: FP Capt James P Langford, CP 1Lt William L Shuman, NB Capt James D Browning, NN 1Lt Richard Antinora, NE 1Lt Robert V Hydrick, IG MSgt Robert S Phipps

301 AREFW, Rickenbacker Crew E-115: P Capt Daniel R Moreno, CP 1Lt Robert E Schineller, N 1Lt Thomas L Bremser, IBO Sgt James R Niswender

308 SMW, Little Rock Crew R-118: MCCC 1Lt Russell J Anarde, DMCCC 1Lt Richard E Houchin, MSAT SrA Michael W Lee, MFT Sgt Wade A Davis

320 BMW, Mather Crew R-118: P Capt Dennis W Geary, CP 1Lt Jay C Duechting, N Capt Roger L Shoemaker, BO TSgt Terence E Griggs

341 SMW, Malmstrom Crew R-005: MCCC Capt Alan R Gierke, DMCCC 2Lt Robert F Steed Jr

380 BMW, Plattsburgh Crew R-167: P Capt Hal R Meyer, CP 1Lt John F D Armstrong, N 1Lt Robert J McKenna, BO Sgt Joseph W Hall Jr

381 SMW, McConnell Crew R-093: MCCC Capt Stanley R Carbett, DMCCC 1Lt Willie S Castillo, MSAT Sgt Robert H Robinson, MFT SrA Clarence A Burtts

384 AREFW, McConnell Crew E-112: AC Capt Dennis E Kelley, CP Capt Robert E Thum, CP Capt Stephen D Macarthur, N Capt James E Ring, BO TSgt Benny R Miller

100 AREFW, Beale Crew S-153: P Capt Francis A Burns, CP 1Lt Edwin G Markle, N Capt David A King, BO MSgt Louis Vasques

92 BMW, Fairchild Crew E-112: P Capt Donald A Walker, CP Capt Mark H Davis, IN Capt Frank M Maloit, IBO SSgt Michael H Strickland

22 BMW, March Crew R-114: AC Capt Howard L Hungerford, CP 1Lt Larry C Hazard, N Lt Richard J Fockele, BO Sgt Michael Davis

55 SRW, Offutt Crew S-03: P Capt Richard L Bender, CP 1Lt William W Josephson, N Maj Peter B Mangum, N Capt James C Deshields

The SAC Safety Screen is an honor roll of SAC's most professional crews. To gain listing on the Screen, crew members must be nominated by their unit commanders and meet high selection criteria of experience in their aircraft or missile system *IAW SACR 127-2*.

*U.S. Government Printing Office
1977-765-042/6

UNIVERSITY OF FLORIDA
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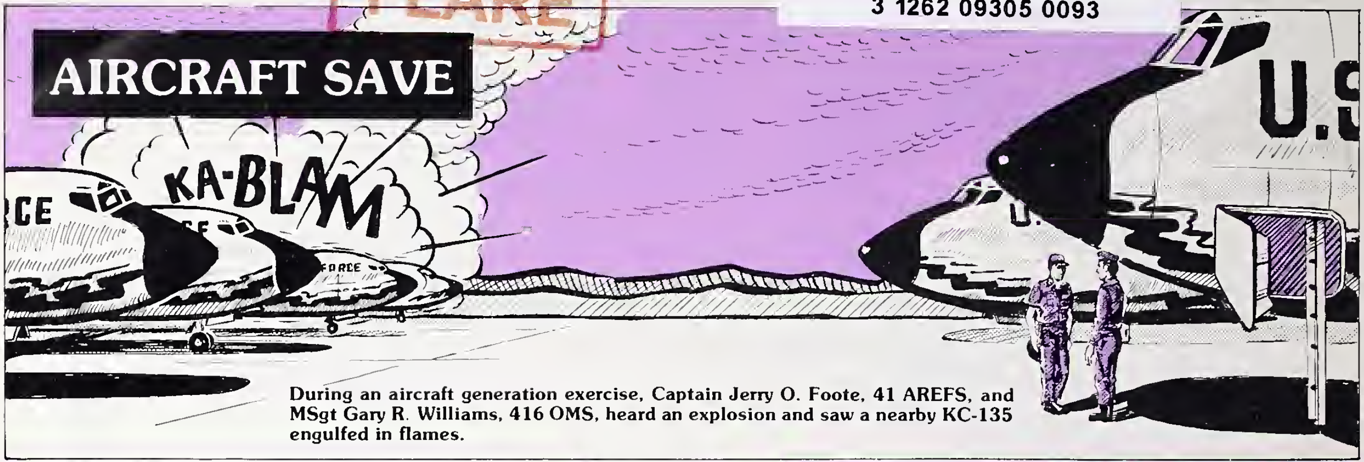
FLARE

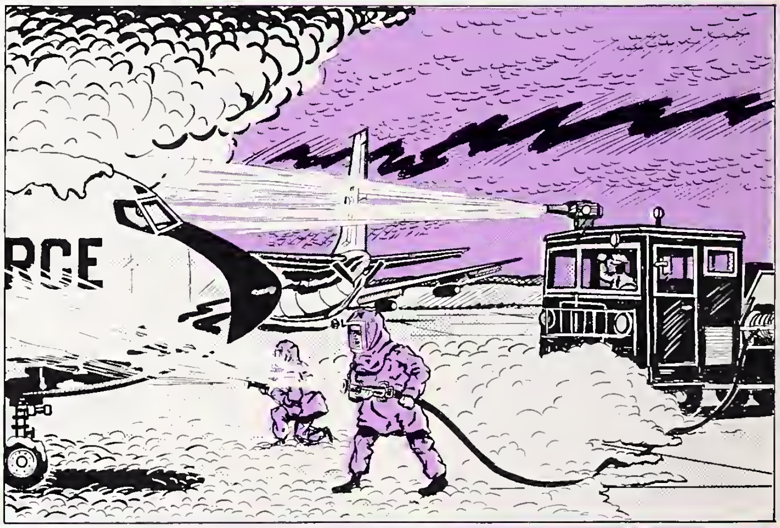
AIRCRAFT SAVE



During an aircraft generation exercise, Captain Jerry O. Foote, 41 AREFS, and MSgt Gary R. Williams, 416 OMS, heard an explosion and saw a nearby KC-135 engulfed in flames.

Realizing that other aircraft were endangered, they proceeded across the ramp to the aircraft adjacent to the fire. Captain Foote entered the tanker, completed the interior check and prepared to start engines. MSgt Williams attempted to install starter cartridge in number four engine but was forced to abandon his position due to the intense heat and approaching flames.

MSgt Williams, realizing that Captain Foote was alone in the cockpit, provided visual signals to start number one and joined him in the cockpit after pulling the ladder and closing the hatch.



During this time, the tanker was damaged by shrapnel from the exploding aircraft. Captain Foote, after starting only one engine, saw flames around his right wing and began to taxi clear of the area. With only the left outboard engine running, and without the use of the aircraft's nose wheel steering, he managed to taxi his aircraft through a complete left turn to clear the area and at the same time started the right outboard engine. As a result of their actions, a valuable combat aircraft was saved.

Captain Jerry O. Foote

MSgt Gary R. Williams